

February 4,
1886.
Vol. V. No. 8

HATTERS,

English and American

**SILK DRESS HATS,
OPERA CRUSH HATS,
FELT and CLOTH HATS,
In Choice Shades.**

**LADIES',
GENTLEMEN'S,**



FURRIERS.

**LEATHER HAT CASES,
CANES, UMBRELLAS,
and WALKING STICKS.**

**Variety Unsurpassed
FOR STUDENTS' WEAR**

D. P. ILSLEY & Co.,

381 Washington St., Opposite Franklin, Boston.

1885. *—* FALL AND WINTER. *—* 1885.

35 STYLES OF COLLARS

For Young Men.

SIZES COMMENCING WITH THIRTEEN INCH.

Send your address for our ILLUSTRATED CATALOGUE. Fall Supplement just issued.

RICHARDSON & GERTS,

Men's Outfitters,

385 Washington Street, Boston.

STUDENTS' NOTE BOOKS,
5 cents to \$5.00.

STYLOGRAPHIC PENS, | WRITING PAPERS,
\$1.00 and upward. | 15c. to \$1.00 per lb.

GENERAL STATIONERY IN PROPORTION.

BLANK BOOKS
OF EVERY DESCRIPTION.

WARD & GAY,

**Paper Merchants & Stationers,
184 Devonshire Street, Boston.**

HENRY H. TUTTLE & Co.

BOOTS and SHOES

The attention of Students is called to our immense
Stock of

BUTTON, CONGRESS, AND LACE BOOTS,

Prices from \$4.50 upward.

A fine line of Hand-Sewed at \$6.50.

English and French Boots in great variety.

— ALSO —

GYMNASIUM AND TENNIS SHOES.

Corner Washington and Winter Streets.

Special Card! I give 10% discount to members of the M. I. T., on all
cash orders.

Dress and School Suits, Fall and Winter Overcoats, English Trouserings, White
Silk and Marseilles Vests for Dress. Rubber Coats to order.

For Overcoats we have an excellent line of beautiful colorings.

P. S. Send address for one of our
books on dress.

S. Grant Smith,

338 Washington Street, Boston.

THE

Massachusetts Institute of Technology,

BOYLSTON STREET, BOSTON.

FRANCIS A. WALKER, President.

THIS school is devoted to the teaching of science, as applied to the various engineering professions; viz., civil, mechanical, mining, and electrical engineering, as well as to architecture, chemistry, metallurgy, physics, and natural history.

Besides the above distinctly professional courses, the Institute offers scientific courses of a less technical character, designed to give students a preparation for business callings. A four years' course in biology, chemistry, and physics has been established, as preparatory to the professional study of medicine.

Modern languages are taught, so far as is needed for the ready and accurate reading of scientific works and periodicals, and may be further pursued as a means of general training.

The constitutional and political history of England and the United States, political economy, and international law are taught, in a measure, to the students on all regular courses, and may be further pursued as optional studies.

Applicants for admission to the Institute are examined in English grammar, geography, French, arithmetic, algebra, modern history, and geometry. A fuller statement of the requirements for admission will be found in the catalogue, which will be sent without charge, on application.

A clear admission paper from any college of recognized character will be accepted as evidence of preparation, in place of an examination.

Graduates of colleges conferring degrees, who have the necessary qualifications for entering the third year class in any of the regular courses of the Institute, will be so admitted, provisionally, on the presentation of their diplomas, and will be given opportunity to make up all deficiencies in professional subjects.

The feature of instruction which has been most largely developed in the school is laboratory training, shop work, and field practice, to supplement, to illustrate, and to emphasize the instruction of the recitation and lecture room.

Surveying-instruments are provided for field work in civil and topographical engineering. Extensive shops have been fitted up for the use of both hand and machine tools, and a laboratory of steam engineering has been established as a part of the instruction in mechanical engineering. Several steam-boilers and steam-engines of various types are available for experiments and tests, as well as a large amount of special apparatus for measuring power, for gauging the flow of water, for tests of belting, etc. The laboratory of applied mechanics contains two testing-machines,—one for ascertaining transverse strength, the other for tension and compression,—besides apparatus for time-tests on timber, for tests of mortars and cements, for tests of shafting, etc. The department of mining engineering and metallurgy has the use of laboratories in which the milling and smelting of lead, copper, silver, and other ores, in economic quantities, are regularly performed by the students themselves. The classes in architecture supplement the work of the drawing and designing rooms by the examination of structures completed or in course of erection, and by practical experiment in the laboratory of applied mechanics, testing the strength of materials and working out problems in construction. The Kidder Chemical Laboratories consist of a laboratory for general chemistry (288 places); a laboratory for analytical chemistry (108 places), together with a special room for volumetric analysis (20 places) and a balance-room with 22 balances; a laboratory for organic chemistry (30 places); a laboratory for sanitary chemistry (16 places); a laboratory for industrial chemistry (16 places); two convenient lecture-rooms; and a well-supplied library and reading-room. The laboratories are thoroughly equipped for the purposes of ordinary instruction, and they also possess excellent facilities for the promotion of original research. The Rogers Laboratory of Physics, the first laboratory in which instruction was systematically given to classes by means of elementary physical measurements conducted by the students themselves, is well provided with the needful facilities for laboratory instruction in both elementary and advanced technical physics, especially in the different branches of electrical engineering.

On the successful completion of any one of the four-year courses of the Institute, the degree of "Bachelor of Science" will be conferred. The degrees of "Master of Science," "Ph.D.," and "Doctor of Science" are open to persons pursuing advanced studies and conducting original researches. Special students are allowed to enter special divisions of any of the courses, on giving evidence that they are prepared to pursue with advantage the studies selected.

The fee for tuition is \$200 a year. Besides this, \$25 or \$30 are needed for books and instruments. There are no separate laboratory fees; only payment for articles broken is required.

For information, address, JAS. P. MUNROE, Secretary.

PREPARATION FOR THE INSTITUTE OF TECHNOLOGY.



259 BOYLSTON STREET.

Wm. H. Ladd.

M. Grant Daniell.

REFERENCE

Is made to the President and Faculty of the Institute in regard to the thoroughness with which pupils are fitted at

**CHAUNCY-HALL SCHOOL,
BOSTON,**

not only for passing the entrance examinations, but also for pursuing successfully their subsequent work.

FITTING

for the Institute has long been a specialty at Chauncy Hall. Thorough preparation is made also for Business and College.

J. B. McALOON & Co.

Merchant Tailors

SPECIAL STYLES

FOR STUDENTS.

First-Class Work. Low Prices.

BOWDOIN SQUARE.

CHAS. L. HOVEY,

13 AVON STREET, BOSTON,

Club Tailor

To the Massachusetts and Boston Clubs,

— FOR —

BICYCLE SUITS

In Every Style,

Made from the Best English Serges and Cassimeres.

A full assortment of Foreign and Domestic Woolens always on hand for gentlemen's fine wear, at moderate prices.

STUDENT'S TICKET.

Limited 21 Meals . . . \$4.50

LUNCH TICKET.

6 Meals . . . \$1.25

CAFÉ WAQUOIT,

249 Columbus Avenue.

ART SCHOOL,

NEW STUDIO BUILDING, 145 DARTMOUTH STREET.

INSTRUCTORS.

DENNIS MILLER BUNKER.

ABBOTT F. GRAVES.

MERCY A. BAILEY.

FREDERICK M. TURNBULL, M.D.

CLASSES NOW OPEN.

Drawing and Painting, Portraiture, separate Life Classes for Ladies and Gentlemen, day and evening, Artistic Anatomy, Still Life, Flowers, Water-Colors, Composition, Perspective.
Students may commence at any time. Circulars at Art Stores.
Apply or address as above.

FRANK M. COWLES, Manager.

Special arrangements made on Saturdays for those unable to attend on other days.

**The
Ritz
Leading
Photographer.**

Special low rates made to all the students of the Institute of Technology, for our superb cabinet and card photographs. Our studio contains the finest specimens of portraits in pastel, crayon, and water-colors. Open free to all.

58 Temple Place, Boston.

The Tech.

VOL. V.

BOSTON, FEB. 4, 1886.

NO. 8.

THE TECH.

Published on alternate Thursdays, during the school year, by the students of the Massachusetts Institute of Technology.

BOARD OF DIRECTORS, 1885-86.

JAS. E. SIMPSON, '86, <i>Pres.</i>	WM. H. CHADBOURN, Jr., '86.
H. C. SPAULDING, '87, <i>Sec.</i>	EDWIN O. JORDAN, '88.
T. W. SPRAGUE, '87, <i>Treas.</i>	FRANKLIN W. HOBBS, '89.

EDITORS.

W. R. INGALLS, '86, <i>Editor-in-Chief.</i>	
ALBERT E. LEACH, '86.	GUY KIRKHAM, '87.
CHAS. H. WOODBURY, '86.	EDWIN O. JORDAN, '88.
WILLIAM M. TAYLOR, '86.	FRANCIS L. V. HOPPIN, '88.
BENJ. C. LANE, '87.	FRANKLIN W. HOBBS, '89.

THEODORE STEBBINS, '86, *Adv. Agt.*

Subscription, \$2.00 per year, in advance. Single copies, 15 cts. each.

FRANK WOOD, PRINTER, 352 WASHINGTON STREET, BOSTON.



THE February number of *Harper's Magazine* contains an article on manual training, in which the writer credits Prof. John D. Runkle, of the Massachusetts Institute, with being the introducer of that method of instruction in the schools of the United States. This was in 1876, or shortly after, Prof. Runkle having drawn the idea from an exhibition of industrial work which he saw at the Centennial. Since then, when our School of Mechanic Arts was formed, mechanical schools have been established in all parts of the country.

In addition to the inception of this idea of manual training, the Institute has played a very important part in carrying it out, not only in our own school, but in other parts of the country, as a glance through the article in *Harper's* will show. Prof. William F. M. Goss, a graduate of the Institute, is in charge of the department of practical mechanics of Purdue University, Indiana. Prof. Ordway, for many years a professor here, is now at the head of the manual

training department of Tulane University, of Louisiana. Another graduate, Prof. George H. Bryant, is in charge of the instruction in the elements of the mechanic arts in the State Agricultural and Mechanical College of Alabama.

Manual training is a subject which excites much interest, at present, since its adoption into the public school system of Boston and other cities seems probable at no very distant day. Already there are more of these schools in the United States than in any other country in the world, with the exception of Russia, where, perhaps, the system has reached its highest development.

THE Athletic Club is to give, on February 13th, what it designates as a "gentlemen's" meeting, wholly given up to sparring, fencing, and wrestling. For the benefit of those not understanding, we offer the following explanation of this meeting. It is the custom of the Athletic Club to have, every spring, an indoor meeting, open to all amateurs of good standing, and to members of the various athletic clubs around Boston, principally among these being the Y. M. C. A., Y. M. C. U., U. A. C., and Harvard Athletic Club. The principal part of this meeting is given up to sparring, and a prominent feature is our annual tug-of-war with Harvard.

The object of the "gentlemen's" meeting is to find whether the Institute can successfully compete with outside talent. We hope all our sparrers will enter these games, and do their best for the Institute.

Last year, for the first time since our tug-of-war contests with Harvard began, several years ago, we were pulled. This must not happen again. It is true that the contest was one more between the classes of '86 of Harvard and the Institute respectively, but, nevertheless, it was

PREPARATION FOR THE INSTITUTE OF TECHNOLOGY.



259 BOYLSTON STREET.

Wm. H. Ladd.

M. Grant Daniell.

REFERENCE

Is made to the President and Faculty of the Institute in regard to the thoroughness with which pupils are fitted at

**CHAUNCY-HALL SCHOOL,
BOSTON,**

not only for passing the entrance examinations, but also for pursuing successfully their subsequent work.

FITTING

for the Institute

has long been a specialty at Chauncy Hall. Thorough preparation is made also for Business and College.

J. B. McALOON & Co.



Merchant Tailors



SPECIAL STYLES

FOR STUDENTS.

First-Class Work. Low Prices.

BOWDOIN SQUARE.

CHAS. L. HOVEY,

13 AVON STREET, BOSTON,

Club Tailor

To the Massachusetts and Boston Clubs,

— FOR —

BICYCLE SUITS

In Every Style,

Made from the Best English Serges and Cassimeres.

A full assortment of Foreign and Domestic Woolens always on hand for gentlemen's fine wear, at moderate prices.

STUDENT'S TICKET.

Limited 21 Meals . . . \$4.50

LUNCH TICKET.

6 Meals . . . \$1.25

CAFÉ WAQUOIT,

249 Columbus Avenue.

ART SCHOOL,

NEW STUDIO BUILDING, 145 DARTMOUTH STREET.

INSTRUCTORS.

DENNIS MILLER BUNKER.

ABBOTT F. GRAVES.

MEROY A. BAILEY.

FREDERICK M. TURNBULL, M.D.

CLASSES NOW OPEN.

Drawing and Painting, Portraiture, separate Life Classes for Ladies and Gentlemen, day and evening, Artistic Anatomy, Still Life, Flowers, Water-Colors, Composition, Perspective.

Students may commence at any time. Circulars at Art Stores. Apply or address as above.

FRANK M. COWLES, Manager.

Special arrangements made on Saturdays for those unable to attend on other days.



The

Leading

Photographer.

Special low rates made to all the students of the Institute of Technology, for our superb cabinet and card photographs. Our studio contains the finest specimens of portraits in pastel, crayon, and water-colors. Open free to all.

58 Temple Place, Boston.

The Tech.

VOL. V.

BOSTON, FEB. 4, 1886.

NO. 8.

THE TECH.

Published on alternate Thursdays, during the school year, by the students of the Massachusetts Institute of Technology.

BOARD OF DIRECTORS, 1885-86.

JAS. E. SIMPSON, '86, <i>Pres.</i>	WM. H. CHADBOURN, Jr., '86.
H. C. SPAULDING, '87, <i>Sec.</i>	EDWIN O. JORDAN, '88.
T. W. SPRAGUE, '87, <i>Treas.</i>	FRANKLIN W. HOBBS, '89.

EDITORS.

W. R. INGALLS, '86, <i>Editor-in-Chief.</i>	
ALBERT E. LEACH, '86.	GUY KIRKHAM, '87.
CHAS. H. WOODBURY, '86.	FRANCIS L. V. HOPPIN, '88.
WILLIAM M. TAYLOR, '86.	
BENJ. C. LANE, '87.	

THEODORE STEBBINS, '86, *Adv. Agt.*

Subscription, \$2.00 per year, in advance. Single copies, 15 cts. each.

FRANK WOOD, PRINTER, 352 WASHINGTON STREET, BOSTON.



THE February number of *Harper's Magazine* contains an article on manual training, in which the writer credits Prof. John D. Runkle, of the Massachusetts Institute, with being the introducer of that method of instruction in the schools of the United States. This was in 1876, or shortly after, Prof. Runkle having drawn the idea from an exhibition of industrial work which he saw at the Centennial. Since then, when our School of Mechanic Arts was formed, mechanical schools have been established in all parts of the country.

In addition to the inception of this idea of manual training, the Institute has played a very important part in carrying it out, not only in our own school, but in other parts of the country, as a glance through the article in *Harper's* will show. Prof. William F. M. Goss, a graduate of the Institute, is in charge of the department of practical mechanics of Purdue University, Indiana. Prof. Ordway, for many years a professor here, is now at the head of the manual

training department of Tulane University, of Louisiana. Another graduate, Prof. George H. Bryant, is in charge of the instruction in the elements of the mechanic arts in the State Agricultural and Mechanical College of Alabama.

Manual training is a subject which excites much interest, at present, since its adoption into the public school system of Boston and other cities seems probable at no very distant day. Already there are more of these schools in the United States than in any other country in the world, with the exception of Russia, where, perhaps, the system has reached its highest development.

THE Athletic Club is to give, on February 13th, what it designates as a "gentlemen's" meeting, wholly given up to sparring, fencing, and wrestling. For the benefit of those not understanding, we offer the following explanation of this meeting. It is the custom of the Athletic Club to have, every spring, an indoor meeting, open to all amateurs of good standing, and to members of the various athletic clubs around Boston, principally among these being the Y. M. C. A., Y. M. C. U., U. A. C., and Harvard Athletic Club. The principal part of this meeting is given up to sparring, and a prominent feature is our annual tug-of-war with Harvard.

The object of the "gentlemen's" meeting is to find whether the Institute can successfully compete with outside talent. We hope all our sparrers will enter these games, and do their best for the Institute.

Last year, for the first time since our tug-of-war contests with Harvard began, several years ago, we were pulled. This must not happen again. It is true that the contest was one more between the classes of '86 of Harvard and the Institute respectively, but, nevertheless, it was

a victory for Harvard. We have several good men who, with proper coaching, can make very good anchors, and we hope these men will take our advice to heart. Let this be no class affair, but let us all work to bring credit to the Institute.

THE *School of Mines Quarterly*, of Columbia College, is a periodical edited by the professors, and published by the co-operation of the Alumni Association and some of the scientific societies of the School of Mines. Nearly all of the instructors of the school are upon the editorial board, and contributions from them and from the alumni fill the numbers of the magazine. Containing, as it does, articles upon mining, metallurgy, chemistry, and allied subjects, from some of the foremost men in these professions, the *Quarterly* has become one of the most important scientific publications in the country. It is an organ which gives the School of Mines a greater influence in scientific circles; it serves as a channel through which the results of investigations and new discoveries there can be published as coming from Columbia.

It seems to us strange that the Institute has no such a publication. The advantages which would be derived from one would be undisputed. Now, why should not a magazine of this kind be started? We believe the only thing necessary would be for some energetic member of the Faculty to take hold of the matter. Obstacles would be encountered, of course, but they would not be insurmountable. The question of financial support would be the most difficult one to settle. From the editorial standpoint the way ought to be clear. The Faculty is largely composed of men of high standing in their professions, and many alumni are occupying high positions in various parts of the country. The "List of Publications, M. I. T.," shows that these men are not idle in regard to the literary work of scientific investigation.

A publication of this kind, including within its scope all of the technical professions, and coming from the leading scientific institution of America, would be of the greatest value to

science. We hope to see such a one before many more years have passed.

TECHNIQUE has now been out six weeks, and, as yet, but a few more than five hundred copies have been sold. After the board of editors have been to the trouble and expense of preparing a book which is of great interest and value to every one at the Institute, it seems as if all should show their appreciation of it by purchasing, at least, a single copy; yet a comparison between the number of students at the Institute and the number of *Techniques* sold, shows that two hundred men, at the lowest estimate, have not felt enough interest to buy one copy.

Then, when we consider that a large number have bought more than one copy, and that some copies have been sold to those who are not students, it seems that hardly more than one-half of the students at the Institute have purchased copies of *Technique*, notwithstanding the fact that the price was put at the exceedingly low figure of fifty cents. We learn from the editors of *Technique* that but a small proportion of '88 and '89 have bought copies. Now this gives us a very poor outlook for the continuation of the publication of the annual, since, for the next two years, it will be intrusted to these classes.

Those of the two lower classes who have not invested should do so at once, as the editors desire to settle their accounts as soon as possible.

Copies are on sale at the office of THE TECH, whenever open, and at all other times may be obtained upon application to any one of the board of editors.

WE are encouraged by receiving a few short contributions from members of the Freshman class, and feel that our admonition in the last number was not entirely in vain. We must, however, receive more contributions than we have yet done to justify us in electing an editor from that class. Contributors should not be discouraged at the non-publication of their articles, which may, for various reasons, be impossible.

The Cruise of the Arethusa.

FOURTH PAPER.

THROUGH THE STRAIT OF BELLE ISLE.

SITUATED upon the Island of St. John is a natural well of very pure water, noted all up and down the coast as the "bottomless well of St. John."

As this point was to be our next stopping-place, we were naturally anxious to see this phenomenon, and to test the truth of the statement made by the natives, to the effect that "if timber was thrown in at night it would be gone in the morning." Our curiosity had also been aroused by the stories of the vast numbers of "fossil codfish, lobsters, and eels" abounding in the rocks of the island.

Our first anchorage at St. John was in a small cove known as the Haven. There were no fossils, however, in the vicinity, and we soon shifted to Well Bay, some three miles distant by water, and on the opposite side of the island.

It was Sunday afternoon when we visited the famous well,—a large square hole in the rocks.

We inspected it with all due admiration, and then prepared a line, to attempt to measure its depth. Down, down, the line went and we found—not a bottomless pit, but a hole whose greatest depth was sixty-five feet. We coiled up our six hundred feet of cod-line and departed in silent disgust, having seen the bottomless well of St. John.

The island has nothing of particular interest to the visitor who may happen to stop there, so three days sufficed for us here, and at the end of that time we were on our way to Castor's Harbor.

Although situated only twelve miles from St. John's, it required seven hours to accomplish

the distance, owing to most vexatious calms and head-winds. It was ten o'clock in the evening before we were able to anchor for the night.

The entrance to the harbor proper is very crooked, and so we did not attempt, it but stayed outside until morning, when we ran up to the head of the harbor and anchored. Most minute search fail to discover any fossils, but we did find an excellent trout-brook, which some of us investigated to the fullest extent and with very good results. Late in the afternoon it was decided to attempt to go on. One of the natives had placed a buoy to mark shallow water for the

trading-vessel. Thinking it a channel-mark we made toward it, but soon ran aground. The water was very low at the time, so that with the rising tide it was not long before we floated. Examination showed that we had sustained no injury. Once outside, the wind was quite high and the weather threatening, so that we were obliged to put back for that night.

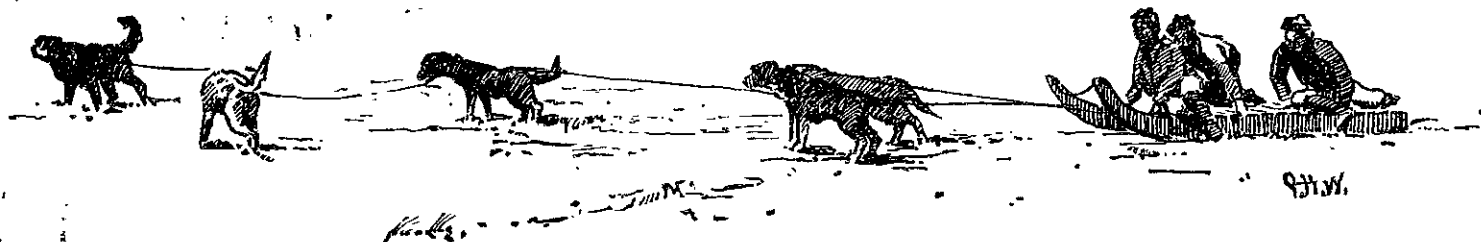
The population of the place is possibly twenty persons in all, who live entirely by fishing, sell-

ing the result of their work to the trader. The place has no communication with the outside world, and, taken all in all, a more desolate and forsaken spot would be hard to find. The next day was more promising, and so we started again. That evening found us safely harbored in Old Ferolle, a deserted French fishing-station, whose old houses and huts are gradually falling to pieces, as they remain year after year without occupants. For a day and a half the high winds continued, compelling us to remain at anchor, but then it moderated sufficiently to allow us to continue.

St. Barbe Bay was chosen for our anchorage that night. Next day opened most disagree-



THE WELL OF ST. JOHN.



A DOG SLEDGE.

ably, the heavy rain effectually dispelling any idea of visiting the shore.

The settlement is small, comprising a few shanties and the indispensable lobster-canning establishment, without which none of the smaller places would be complete. Until quite recently St. Barbe has been cut off completely from the outside world, but now is one of the regular ports of the St. John's mail-steamer. This boat leaves St. John's every two weeks, making the trip up the eastern coast of Newfoundland, coming down as far as this place, and then going across to the Labrador coast. With afternoon came the desired lull in the storm, and taking advantage of it, two parties were immediately formed to investigate the neighborhood, and see what was to be found. The object of the first was to search for fossils; but they did not succeed in finding any, as the rocks were barren.

The second party was bound for a trout-stream, a mile or so distant from the yacht. We were unfortunate enough to arrive at the mouth of the brook just at low tide, which necessitated pushing our boat over about a mile of flats before we reached the first rapids, where we tied our dory and proceeded some distance farther on foot.

The stream is exceedingly pretty; here is a small waterfall or a stretch of rapids where the water is lashed into foam as it tumbles over the rocks; there the stream widens out into a placid pool, whose surface throws back a perfect reflection of the white birches and heavy undergrowth; while in the shade under the banks we could see the trout lazily moving their fins backward and forward, as if waiting for inducements to rise.

Our success was good, and by the time we were ready to go back we had a large number of very handsome fish. The portion of the stream from the first rapids to the mouth is affected by the tide, but by the time of our return the water had risen enough to allow us to row out. This part of the stream has none of the beauty seen farther up. Instead of the birches and the high banks, you wind in and out, as the brook makes its way through the high reeds that grow on either side.

Nothing was to be gained by remaining longer at St. Barbe, and so early next morning we continued our journey. The breeze was favorable, and we were soon making excellent progress toward the Strait of Belle Isle. From now on the Newfoundland and Labrador coasts rapidly approach each other, until they reach their minimum width at Cape Norman. The tide runs with such swiftness through the Strait that it is impossible for any vessel to beat through against it.

By noon we were nearly through the Strait; directly ahead of us, its outlines only dimly visible, lay Belle Isle; on our right the low, straight coast of Newfoundland stretched away as far as the eye could reach to the south, and on our left rose the high, red sandstone cliffs of Labrador. Farther to northward we could see a number of large icebergs, standing out in bold relief against the background of the dark-red hills.

Early in the afternoon we came to anchor in Cook Harbor. This settlement, no exception to the rule along this coast, is small and dilap-

idated. The people live entirely by fishing. In the summer-time the place has a mail twice a month from St. John's; but in the winter-time they are not so favored, and are compelled to remain for months shut off from all intercourse with the outside world, though communication is kept up with some of the nearer settlements, by means of dog-sleds. These sleds are of varying lengths, and are drawn by dogs, each harnessed separately and attached to the sled by a single long rope. The foremost dog is the leader, and is generally better trained than the remainder. On these sleds the men go long distances back from the coast, in order to obtain wood for domestic use.

The extreme cold of the winter freezes up all springs and wells, making it necessary, often, for the people to bring ice from the nearest stream and melt it, in order to obtain water for household use. In this connection the dog-sleds are again brought into requisition. The speed of the dogs is sometimes very considerable, and is kept up for quite long distances. One of the natives told us, that last winter his team had gone sixty miles in about five hours and a half.

At Cape Norman, distant some two miles from Cook Harbor, is a light-house belonging to Canada. That country also has light-houses at Belle Isle, Point Rich, and at Cape Ray; these are the only light-houses along the west coast of Newfoundland.

As an example of the rapidity with which news travels along that coast, we were told that the light-house at Cape Ray was destroyed by fire the first of May, and that the keeper of the Cape Norman light, some three hundred miles distant, did not hear of it until told by the captain of the supply steamer, the first of August.

One morning we took a small sail-boat to visit the Cape. On our way to that point we passed a large Norwegian bark quite close to the shore. Our old skipper remarked at the time, "That's the way they generally does, when they wants to lose their vessel and get their insurance." He was silent for a moment, and then added with a smile, "I wish he would go aground, for

I'd get firewood enough to last me all winter." We soon reached the light-house, and all thought of the bark passed from our minds for the time. We employed the greater part of that day at the Cape, in getting fossils; southward from the light, for miles and miles, the rocks are devoid of the slightest covering of vegetation, and offer good opportunities to the geologist.

Next morning, while sitting on deck, we noticed numbers of small boats laden with wreckage; and on making inquiry, we found that the bark had actually gone ashore during the night, and the inhabitants had completely stripped the hull by eight o'clock in the morning, taking everything, even the pumps and cabin stairs.

Afterward we were told that it was not an uncommon occurrence for vessels to be run ashore for the purpose of obtaining the insurance.

To the natives a wreck is a Godsend, as it supplies them with wood enough to last a long time, and saves them the necessity of making long, tedious journeys into the interior for that article.

B.

The Difference.

O happy, happy, happy Moon!
I envy you the priceless boon
Of gazing down upon the face
Of her in whom is every grace,
And whom I love.

But once I envied not your power,
For in that blissful, happy hour
In which I sat with her, my love,
And you only looked on from above,
I kissed her.

A. S. W.

Camping in California.

DOUBTLESS nearly everybody has been camping at some time or other during their lives, but few, probably, have enjoyed such sport as did a party of a half a dozen, among whom was the writer, in California, last summer. Bright and early one morning, a few days after the Fourth of July, we started on a three weeks' trip, and by the time the sun was up we were traveling among the giant red-



A DOG SLEDGE.

ably, the heavy rain effectually dispelling any idea of visiting the shore.

The settlement is small, comprising a few shanties and the indispensable lobster-canning establishment, without which none of the smaller places would be complete. Until quite recently St. Barbe has been cut off completely from the outside world, but now is one of the regular ports of the St. John's mail-steamer. This boat leaves St. John's every two weeks, making the trip up the eastern coast of Newfoundland, coming down as far as this place, and then going across to the Labrador coast. With afternoon came the desired lull in the storm, and taking advantage of it, two parties were immediately formed to investigate the neighborhood, and see what was to be found. The object of the first was to search for fossils; but they did not succeed in finding any, as the rocks were barren.

The second party was bound for a trout-stream, a mile or so distant from the yacht. We were unfortunate enough to arrive at the mouth of the brook just at low tide, which necessitated pushing our boat over about a mile of flats before we reached the first rapids, where we tied our dory and proceeded some distance farther on foot.

The stream is exceedingly pretty; here is a small waterfall or a stretch of rapids where the water is lashed into foam as it tumbles over the rocks; there the stream widens out into a placid pool, whose surface throws back a perfect reflection of the white birches and heavy undergrowth; while in the shade under the banks we could see the trout lazily moving their fins backward and forward, as if waiting for inducements to rise.

Our success was good, and by the time we were ready to go back we had a large number of very handsome fish. The portion of the stream from the first rapids to the mouth is affected by the tide, but by the time of our return the water had risen enough to allow us to row out. This part of the stream has none of the beauty seen farther up. Instead of the birches and the high banks, you wind in and out, as the brook makes its way through the high reeds that grow on either side.

Nothing was to be gained by remaining longer at St. Barbe, and so early next morning we continued our journey. The breeze was favorable, and we were soon making excellent progress toward the Strait of Belle Isle. From now on the Newfoundland and Labrador coasts rapidly approach each other, until they reach their minimum width at Cape Norman. The tide runs with such swiftness through the Strait that it is impossible for any vessel to beat through against it.

By noon we were nearly through the Strait; directly ahead of us, its outlines only dimly visible, lay Belle Isle; on our right the low, straight coast of Newfoundland stretched away as far as the eye could reach to the south, and on our left rose the high, red sandstone cliffs of Labrador. Farther to northward we could see a number of large icebergs, standing out in bold relief against the background of the dark-red hills.

Early in the afternoon we came to anchor in Cook Harbor. This settlement, no exception to the rule along this coast, is small and dilap-

idated. The people live entirely by fishing. In the summer-time the place has a mail twice a month from St. John's; but in the winter-time they are not so favored, and are compelled to remain for months shut off from all intercourse with the outside world, though communication is kept up with some of the nearer settlements, by means of dog-sleds. These sleds are of varying lengths, and are drawn by dogs, each harnessed separately and attached to the sled by a single long rope. The foremost dog is the leader, and is generally better trained than the remainder. On these sleds the men go long distances back from the coast, in order to obtain wood for domestic use.

The extreme cold of the winter freezes up all springs and wells, making it necessary, often, for the people to bring ice from the nearest stream and melt it, in order to obtain water for household use. In this connection the dog-sleds are again brought into requisition. The speed of the dogs is sometimes very considerable, and is kept up for quite long distances. One of the natives told us, that last winter his team had gone sixty miles in about five hours and a half.

At Cape Norman, distant some two miles from Cook Harbor, is a light-house belonging to Canada. That country also has light-houses at Belle Isle, Point Rich, and at Cape Ray; these are the only light-houses along the west coast of Newfoundland.

As an example of the rapidity with which news travels along that coast, we were told that the light-house at Cape Ray was destroyed by fire the first of May, and that the keeper of the Cape Norman light, some three hundred miles distant, did not hear of it until told by the captain of the supply steamer, the first of August.

One morning we took a small sail-boat to visit the Cape. On our way to that point we passed a large Norwegian bark quite close to the shore. Our old skipper remarked at the time, "That's the way they generally does, when they wants to lose their vessel and get their insurance." He was silent for a moment, and then added with a smile, "I wish he would go aground, for

I'd get firewood enough to last me all winter." We soon reached the light-house, and all thought of the bark passed from our minds for the time. We employed the greater part of that day at the Cape, in getting fossils; southward from the light, for miles and miles, the rocks are devoid of the slightest covering of vegetation, and offer good opportunities to the geologist.

Next morning, while sitting on deck, we noticed numbers of small boats laden with wreckage; and on making inquiry, we found that the bark had actually gone ashore during the night, and the inhabitants had completely stripped the hull by eight o'clock in the morning, taking everything, even the pumps and cabin stairs.

Afterward we were told that it was not an uncommon occurrence for vessels to be run ashore for the purpose of obtaining the insurance.

To the natives a wreck is a Godsend, as it supplies them with wood enough to last a long time, and saves them the necessity of making long, tedious journeys into the interior for that article.

B.

The Difference.

O happy, happy, happy Moon!
I envy you the priceless boon
Of gazing down upon the face
Of her in whom is every grace,
And whom I love.

But once I envied not your power,
For in that blissful, happy hour
In which I sat with her, my love,
And you only looked on from above,
I kissed her.

A. S. W.

Camping in California.

DOUBTLESS nearly everybody has been camping at some time or other during their lives, but few, probably, have enjoyed such sport as did a party of a half a dozen, among whom was the writer, in California, last summer. Bright and early one morning, a few days after the Fourth of July, we started on a three weeks' trip, and by the time the sun was up we were traveling among the giant red-

woods, through whose tops but little sunlight ever penetrates. They stand in close array in heights varying from one hundred to three hundred feet, and with diameters ranging from five to twenty feet. These trees yield a most remarkable wood of a reddish color, and often beautifully variegated. Huge burls protruding from the sides of some of the trees, like monstrous warts, supply the curly redwood which makes very beautiful cabinets and center-tables, as it takes a polish as smooth as glass, and exhibits most remarkable eccentricities of grain. The body of the trees near the butt splits almost as straight as if it were cut with a saw, and is used for making shingles.

For several hours our party traveled in this dark and damp belt, at length emerging into an open country where the sun was shining forth in all its splendor, although in the forest one would never have known there was a sun. Early in the afternoon of the second day we reached our camping-ground, where we unpacked our mules and unsaddled our horses, both of which were turned loose in the luxuriant grass, having first, however, hobbled the bell-mare, to prevent their wandering. The rest of the day was spent in unpacking the provisions and arranging everything for a protracted stay. Shortly after dark we curled up in our blankets, with our saddles as pillows, and were soon dreaming of the deer we expected to kill on the morrow. By five o'clock next morning we were all astir, and after taking a cup of hot coffee, set out in various directions, keeping within a distance of a few miles. The crack of a rifle was heard every now and then, but when all had returned to camp it was found that only two of the Nimrods could show blood on their butcher-knives. After breakfast two of the mules were caught up and saddled, and in the course of an hour two fine bucks were brought in and strung up. We immediately stripped them of their hides, and suspended them from the branches of a large black oak which stood in the midst of our camp, and which furnished us with a most refreshing shade in the middle of the day. We spent the remainder of the

morning in swimming in a sheltered portion of a clear, warm stream that ran close by our camp.

The next few days were given up to the utmost indolence, it seeming as if each one was trying to outdo the others in the amount of sleeping he could accomplish. We soon became tired of doing nothing, however, and concluded we would like to see the neighboring country. Upon one occasion we caught up our mules and started in search of a camping-place on the banks of a stream called by the suggestive name of Bug Creek, concerning which we had a few vague ideas. The first half of our journey there was comparatively easy, but before long we lost our way among the numerous sheep-trails. Knowing, however, the general direction, we pressed on, often having to circumvent deep gorges, sometimes riding, but more frequently on foot, pulling our mules along behind us as we slowly made our way through the thick oak brush. After progressing in this manner for about three hours, we found the object of our search. It was a most beautiful nook sheltered by wide-spreading alders, while the creek, with its clear, sparkling water, made it look all the more charming. On close inspection of the brook the appropriateness of its name became evident, as there were to be seen numerous black specimens about the size of large spiders darting in all directions through the water.

One of the party went to inspect a seemingly deserted cabin that was near by, while the rest of us looked around to see what could be found. We were, however, soon joined by him with the news that there was a small black bear asleep in the cabin; he couldn't make out head nor tail to it, he said, but was sure it was a bear. Only one of the party had brought a gun along, so he was put in the lead, the rest of us following close at his heels. A council of war was held, and it was decided that one of the party was to poke his bearship with a long stick, and when the later showed signs of life, the man with the gun was to dispatch him. Lots being drawn as to who was to do the poking, the shortest straw fell to the writer; so with throbbing heart he procured a long stick, and slowly

went up to the door of the cabin. Then softly he poked Bruin where he thought the latter's ribs ought to be, but the bear didn't seem to mind it in the least. Becoming desperate, the writer gave him a thrust that would have waked the dead—but still no signs of life; whereupon he touched the object, finding it to be cold, and, on bringing it into the light, it turned out to be Bruin's *skin*, which some sheep-herder had forgotten. Nothing was said about this when we returned to town, but it was a source of much merriment among ourselves.

We reached our camp before sunset that evening without serious trouble, except that one of the mules balked upon a place he thought was too steep; whereupon we all dismounted and began pushing him, while the rider pulled him from in front by the bridle. We were too much for our long-eared friend, however, so he was compelled to give in, though not till he had tried the effect that braying would have on his cause.

A few days after this episode we concluded we would like to enjoy some better fishing than the stream near us afforded. As we expected to stay over night we took our blankets with us, besides a good supply of food. As usual, we lost the trail, but found it further on, and shortly after noon we reached a suitable camping-ground. Just before we reached our camping-place one of our mules came near ending his earthly career. We came to a deep gully, the trail passing over it a few steps above a steep incline. A tree had fallen, so that when the horses jumped, the saddle struck the end of it and threw them back. To avoid this we took the hatchet and cut a new trail a little lower down, where the gully was wider, and it was here that our mule came to grief. He went down into the hollow all right, and was ascending the other side, which was very steep, when he lost his balance and fell backwards, rolling over and over, till one more turn would have sent him over the precipice. By this time, however, we had all dismounted, and one seized him by the tail, another taking him by the ears, while the remainder of the party held on by

his feet. A rope was taken from one of the horses and tied around the mule's neck, being then secured to a small tree. The pack was removed and the saddle loosened, when we pulled him to his feet by means of the rope fastened around his neck. After a few minutes we replaced the pack, and proceeded on our way, reaching the camping-ground without further accident.

During the afternoon we caught several hundred trout, and killed a deer. By the time it was dark all had come in laden with spoils, and were telling about the beautiful nooks from which they had dragged the gamiest of the finny tribe, and the wonderful, natural park one had seen which covered a space of several acres, smooth and green as a lawn, while every few yards tall, graceful pines towered toward the heavens. After every one had exhausted his list of wonders, it dawned upon us that the mules and horses were nowhere within hearing. As we expected to start at an early hour next morning for our permanent camp, we did not wish to hunt for them then, so we set out after the wandering animals. After proceeding down the stream for nearly a mile in the dark, we heard the faint tinkle of a bell, and shortly after found the bell-mare, whom we led back to camp, the horses and mules following.

By noon next day we arrived at our old camp, and immediately proceeded to enjoy a swim. Some three days after this expedition we started for a huge rock several miles distant, which was the scene of a battle in early times between the whites and Indians. The pioneers had driven the Indians up on to this rock, which was some five hundred feet high. The red men were kept up there during the day, but escaped under cover of night, leaving no traces behind them to show where they had gone. We reached the rock without much trouble, and, tying our mules a short distance away, we ascended it. Reaching the top, after a hard climb, we obtained a splendid view of the surrounding country for a distance of thirty miles. Becoming tired of viewing the landscape, we amused ourselves by rolling huge boulders down the

steep sides of the rock, making a most terrific noise, and bursting into thousands of fragments. Bands of sheep could be seen hurrying out of sight amid clouds of dust, terrified at the noise we were making, and the snorting of our mules was distinctly audible between the crashes. Our return to camp was uneventful, save that one of the party killed a wild pig, mistaking it for a bear as it ran through the brush.

The fourth day after this saw us on the road again, but we took an entirely different direction this time. We extended our travels as far as a high crest several miles south of camp, obtaining an excellent view of the surrounding district. Becoming thirsty, we tied our mules and went in search of water. We had not proceeded far, however, when we heard the brush cracking at a great rate, and presently there appeared about fifty cattle coming directly toward us. These cattle were half wild, and very ugly, and, as there was quite a band of them, they did not hesitate to charge us. We ran behind some trees, threw our coats over our heads, and ran toward them yelling at the top of our voices, this sending them fleeing in all directions. Knowing they would soon return, we made all haste to our mules and mounted them, the cattle following, shaking their horns and pawing the ground. Once in the saddle we were safe, for they are accustomed to horsemen, and do not offer to harm them. We made a parting charge at them on our mules, and then turned toward camp, the cattle watching us until we disappeared from sight. This was the last of our expeditions, and during the remainder of our stay we spent our time largely in hunting. The heat of the day was spent in swimming or performing gymnastics, and a deck of cards afforded us considerable pleasure.

Pack-trains passed through camp every few days, bringing the news from town, or bearing word to our folks. Before we realized the fact, three weeks had slipped through our fingers, and unwillingly we returned to civilization, consoled, however, by the thought that probably we should all take part next summer in another expedition that would likely prove as pleasant, if

not more so, than the one from which we had just returned.

H. G. G.

The Modern Version.

A lively maid once saw a frog,
Calm, seated on a mossy log,
No fear of interruption rude
Disturbing his still solitude.
"Come off your perch!" she softly cried,
And quickly to a bent pin tied
A bit of string; then for the bait
To lure poor froggy to his fate,
A small, bright-colored strip she tore
From the thin apron which she wore,
And stuck the pin-point through and through it,
Just as she'd seen her brothers do it.
Now down the gay temptation goes,
And flits by the batrachian's nose,
Where, after three or four vain snatches,
The green one's jaw too truly catches
On the sharp point; from which suspended
He feels all earthly joys are ended,
And thinks the heartless maid must be
Some student of Biology;
So smilingly she notes each action,
And murmurs, "Muscular contraction."
At last the fatal hook slipped out;
The victim, with sore-mangled snout,
Lay weltering by the streamlet's flow;
But as the maiden turned to go,
She thought the frog croaked plaintively,
"Twas fun to you, but death to me!"

Let him for this a moral find
Who knows the ways of woman-kind.

L.

A Sad Mistake.

"LAWRENCE," said my friend Forbes, as he settled himself comfortably in my best chair and commenced vigorously to puff away at my pipe, "one of my ambitions was nearly realized to-day."

The mere fact of having any of one's ambitions wholly or nearly realized is certainly interesting; and although I knew that Forbes was a man of many of these, yet I was positively certain that they all had heretofore shared the fate of the unsuccessful. So, naturally, I queried, "How? Has the governor come down handsomely for the new year? or has your last problem on the Doric Order been accepted?"

"No," he replied; "far above the worldly thought of gold, or even above the sacred mys-

teries of the Doric Order."

"Well, give it to us," I said impatiently.

"You know, Lawrence, it has always been my aim in life to relieve beauty in distress. Did you know it?" he said, turning sharply on me.

"I did," I replied, striving vainly to suppress a smile.

"That is, in fact, to save a fair maiden from the jaws of death. Well, that aim was, as I thought, about fulfilled to-day, as I said before." He puffed vigorously a few times, and then continued: "As I was proceeding through the Public Garden to the Tech., this afternoon, I looked up, and to my horror saw a furious runaway—a stylish coupé drawn by two frantic horses, with the alarmed coachman vainly endeavoring to hold them in. But it was of no avail. The carriage, in being turned down Arlington Street, 'slewed' around and fell over with a crash, and precipitated the driver with terrific force to the sidewalk. The horses, maddened to fury by this new fright, started away at full speed, dragging the overturned carriage with them. Now, said I, here's my chance; I vow I saw something white appear in the carriage window as it went over. Now, there's my fate there, in that coupé. Now I will gallantly stop that runaway, rush to the door, seize the fainting maid, bring her back to life, and present my card and say, 'Oh! ah! I only did my duty, you know.' 'Yes, I am at the Tech.' 'I will call, thank you.' So off I started across the Garden, and really did stop the now nearly exhausted steeds, after having been 'wiped' all over the muddy street, and having my shins nicely *em-barked* in the enterprise. No, don't throw it, I beg! Well, I was already in the act of presenting my card, when I rushed to the door, tore it open, to find—O, Lawrence, to find—say, why in thunder don't you ever clean your pipe?"

"O go on," I answered quickly.

"O yes—to find only a large bundle labelled, 'To the Troy Laundry.' Laugh! It was funny, but oh! the rage I felt. And there in that muddy street I registered a solemn, sacred

vow that the next time I ever thought of stopping a runaway coach, I would ask the overthrown coachman (who by the way was only stunned) *who* or *what* was in that vehicle, before using up all the strength and wind that nature has supplied me with."

LAURENS, '88.

The Last Match.

WHAT man is there, however commonplace his existence may be, who has not, at some time during his life, found himself in a predicament where his last match was most precious to him. I do not refer to those explorers and hunters who have been lost on the plains or in the forest, and, with the snow falling fast around them, huddled around a pile of brushwood, have anxiously awaited the fate of the last match. It is not these I mean, but the men whose feet never carry them beyond the domain of paved streets, or, at the most, of sidewalks.

Who is there who has not been obliged to be out on a rainy, windy night, and wishing the solace of a pipeful of tobacco, has found only one lone match in his pocket. With what anxiety is that match lighted; with what interest does he watch its flickering flame; and with what feelings of disgust and sorrow does he view its premature extinction by a gust of wind.

I had walked out one evening a mile or two into the suburbs, in order to make a call, and on my way back I thought to beguile the time with a cigarette. I had a box of wax-tapers in my pocket, and one by one I struck them; they would give forth a fitful glare, then die out, but that cigarette would not light. I had stood behind a tree for ten minutes and used all my tapers but one, before I discovered that there was a hole in the paper of the cigarette. I pulled out a fresh cigarette, and lighted the last taper, but of course it went out before I could secure a light.

A queer example of the perversity of the match is the way in which it will burn after you finally have lit your cigar. Then, when you no longer have any use for it, it will flame like a

Fourth-of-July bonfire. You can't blow it out; the wind can't blow it out; you may throw it down on the pavement and it will still burn — until you jump on it.

Once I went to visit an old college friend of mine, whom I had not seen for a long time. We spent the evening talking over old times, and it was late when I turned in for the night; but I had not been asleep long before I awoke, feeling unaccountably thirsty. I remembered having seen a pitcher of water on the hall table just outside my door, but the question was, how to get it. Before I had gone to bed I had noticed a good many doors in the room, which all looked quite alike, and I doubted my ability to find the right one in the dark. So I got out of bed and felt through the pockets of my clothes for a match. To my horror I found that my box of tapers was not there, and then it occurred to me that I had left it in the smoking-room. The only thing to do, then, was to find some matches in the room, so I started off on a tour of discovery, on hands and knees, thinking that the best method of procedure in a strange room, as dark as a pocket; besides, I had strong moral objections against stubbing against chair-legs with my bare feet. I made fine progress until I brought up against the wall with a crash; it seemed as though I had crushed my skull. I laid down on the floor and groaned; then I swore so that the air would have been blue if it hadn't been black, and after that I felt better. The rest of my journey was a series of mishaps, and after I knocked a big vase off the mantelshelf I resolved to return to bed, without getting my drink of water. However, I bethought myself that I would once more search my clothes. It was a happy thought. With what joyous feelings was it that I felt a little stick, which I *knew* must be a match, in the lining of my coat! With a violent pull I tore the lining of the coat, and the match was mine! I struck it; it burned, and I lighted the gas. Then I was all right.

As I opened the door I found my friend outside, rolling with laughter.

"How came you here?" I asked him.

"O, I heard the noise you were making, and I came out to see what you were up to. But, by Jove! I never knew before that you could swear so like a pirate."

"Why in thunder, then, didn't you open the door?" was all I could say, as I rubbed my aching head.

A. R.

Noticeable Articles.

For all who desire a magazine which neither depends upon illustrations for its popularity, nor upon sensational stories, but upon the interest and literary merits of its contents, *Macmillan's* is to be strongly recommended. The January number begins with a paper on General Grant, which is interesting as coming from an outsider. It concludes thus: "Few men had known more of the vicissitudes of life. He had tested all the sweets, such as they are, of wild and unbounded popularity; he had sunk into neglect; he had seen his reputation undergo total eclipse. In his declining years, and smitten with a fatal malady, he had seen himself reduced to penury, and obliged to begin the fight against want, all over again. History may possibly decide that he is not to be ranked among the greatest of generals, or the wisest of statesmen; but it will be obliged to acknowledge that he was the only man who proved himself able to bring a long and desperate civil war to an end; and it will do justice to the ardent patriotism which always animated him, and to the intrepid soul which refused to be crushed, even when all his little world lay in ruins around him."

The next paper is by George Saintsbury, author of the excellent "Short History of French Literature," on that singular man and writer, George Borrow. Those who have not read "The Bible in Spain," "Lavengro," and "Wild Wales," are still unacquainted with three interesting and picturesque books.

Mr. Arthur Tilley is the author of a capital little book, just published, on the Literature of the French Renaissance, in which he contrives to give an excellent idea of the Renaissance in general, as contrasted with Mediævalism. He writes a paper worth reading, on the poetic imagination. Here is a passage which addresses itself to students who are of necessity much engrossed with the theory of material laws: "People are gifted with imagination in very various degrees; but every one can cultivate his imagination, can make it more sensible to the calls

of beauty and sympathy. People whose lives are shut in by sordid and commonplace surroundings have very little imagination, but the spark is there; it only wants fanning. By seeing great pictures, by reading good literature, whether it be poems or novels, above all, by intercourse with nature, the imagination may certainly be stimulated. What is the aim of art for the people, of parks for the people, but that they may become more sensible to the influences of the spiritual world, that their lives may be made brighter by contact with the ideal? But it is in the power of all of us, the educated and the uneducated, alike, either to quicken or to deaden the imagination. Sympathy with our fellow-men, high aspirations, purity, unworldliness—these are the helps to the imagination. Selfishness, unbelief, sensuality, worldliness—these are the hindrances."

There is a paper on the recent performance of the "Eumenides" of Æschylus, at English Cambridge, in which a young lady from Girton College took the part of Athena, and of her the writer says: "Hard indeed it would have been to find either man or woman to deliver the words with more clearness and perception, or to present a more charming figure in the white robe, glancing helmet, and long, shadowing spear, even if charm be *not* the capital idea we should get from the vision of her whose eyes could "shine terribly."

While classics thus flourish at Cambridge, the ghost of Dr. Hawtrey, the famous old classical master, is very much perturbed at their condition in the great school over which he once ruled, and it gives vent to its feelings in an ode on a *near* prospect of Eton College, as Gray did to his on a distant one:

"Vanished is now that heavenly choir;
The thoughts that burn, the poet's fire
A colder age disdains;
The mighty roll of Homer's verse
Gives way to German, French, or worse,
And Prose, triumphant, reigns.
Strange studies, whose outlandish name
My shuddering lips refuse to frame,
The place of classics fill,"

And it is true, as the devotees of classical education have sorrowfully to confess, that in all the famous "Great Schools" of England, it is what is called the "Modern Side" that more and more flourishes. There was need enough of reform, but perhaps, as in all such cases, there is danger that the reaction will be carried too far.

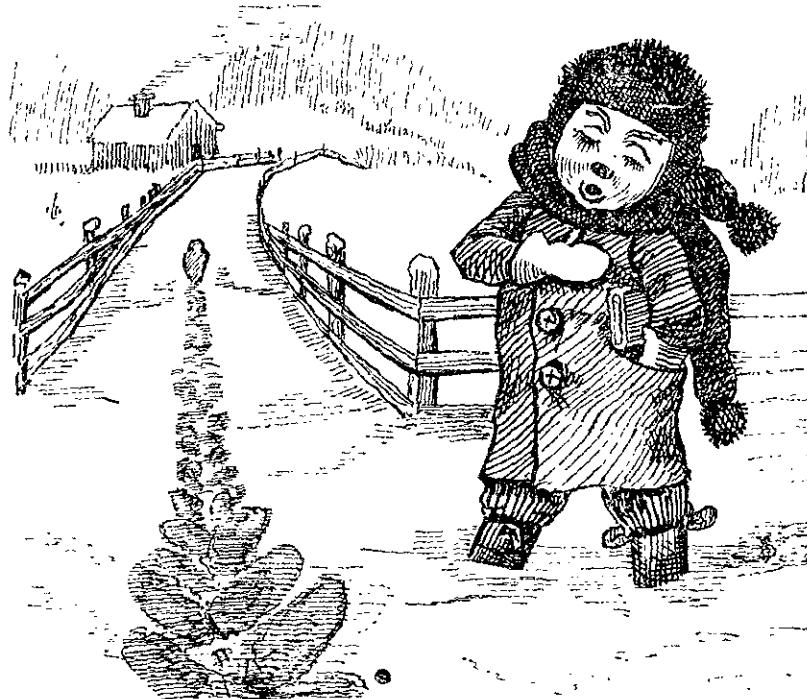
Lovers of the noble game of Whist, of whom the present writer professes himself to be one, will read with special interest a paper by the famous "Cavendish" on "American Leads at Whist," in which he gives in his adhesion to the "fourth-best" system of leading, with the invention of which he credits Mr. Nicholas Trist, of New Orleans.

As *Macmillan's* is a capital *unillustrated* magazine, so the *English Illustrated Magazine*, published by the same enterprising firm, is a charming and wonderfully cheap illustrated one. The number for January contains a striking portrait of Sir Henry Thompson, after Millais, a delightfully illustrated paper on Charles Lamb in Hertfordshire, another entitled, "A Month in Sicily," and another, with amusing illustrations called, "A Hundred Years Ago." The story now running in it is "Aunt Rachel: a Rustic Sentimental Comedy," by D. Christie Murray, author of "Rainbow Gold," which is said to be a first-rate novel.

W. P. A.

The man who hangs a girl's arm out at full length and proceeds to work it up and down while waltzing, should never forget his dancing-pumps.—*Ex.*

The other evening at a metropolitan theater, as the drop slowly rose and exposed to the view of the audience a tableau of ballet-girls, an old countryman in the parquet jumped excitedly to his feet and cried out: "Hi, there! Somebody let down that curting ag'in; the gals ain't dressed yit.—*Columbia Spectator.*



"AH! BEAUTIFUL SNOW, AS WITHIN THIS NOBLE BREAST, SO UPON THY FAIR BOSOM, HATH HER CINDERELLA-LIKE FEET LEFT WIDE AND GAPING WOUNDS,"

TECHNICAL.

A decision has been rendered by the Commissioner of Patents in the case of Jacob Reese vs. Thomas of the basic-Bessemer process, for priority in invention of furnace-linings, in favor of Mr. Reese.

The forty-fourth meeting of the American Institute of Mining Engineers will be held at Pittsburg, Pa., beginning Tuesday evening, Feb. 16, 1886.

A sewer is building in Washington which is seven feet larger in diameter than any other in the world. In its smallest part it is larger than the largest of the sewers in Paris. For over two thousand feet it is a circular sewer of 22 feet in diameter. There is connected with it a sewer 5,000 feet, or nearly one mile in length, and 20 feet in diameter. A fully equipped palace-car, locomotive and all, could be run through it without difficulty. This enormous sewer is intended to drain the immense water-shed lying to the north of the city. Besides that, it will carry to the eastern branch of the Potomac all the contents of the smaller system of sewers in the northern part of the city. It will take a year to complete the work.—*Manufacturers' Gazette*.

In the January number of the *Journal of Franklin Institute* is published a letter from Prof. Dolbear, of Tufts College, in which he gives it as his opinion that the speaking-telephone was invented by Reis, twelve years before Bell obtained his patent. He is indorsed in this opinion by a large number of eminent scientific men.

The latest scheme for rapid transit in New York is an electric railway, to operate in a tunnel under Broadway. It is proposed to excavate for the entire width of the street, and lay four tracks, two for express and two for accommodation trains, each track to be for trains in one direction only. Each track is to be laid in a separate gallery, which is to be just large enough for the cars to pass through, so that the trains will act like pistons, and carry all the air before them, thus ventilating the tunnel. Space will be reserved on each side of the tunnel for gas and water pipes, and sewers.

A remarkable performance of a locomotive on the Mississippi Valley Railroad is reported by the *Railroad Gazette*. The engine started from a point 122 miles north of New Orleans with a train of 62 loaded freight-cars, and afterward picked up 88 more, going into New Orleans with a train of 150 loaded cars and two cabooses. The length of the train was 90 feet more than one mile, and its total weight was 2,721 tons.

Near Burgbrohl, on the Rhine, a bore-hole about 175 feet deep yields a large and steady supply of carbonic acid gas, which is now compressed in wrought-iron vessels, and used for various purposes. Its enormous expansion is employed by Messrs. Krupp, at Essen, for compressing steel and other casts, and it is also utilized for impregnating beer and natural water, for fire-extinguishing apparatus, as a motor force for torpedoes, etc.

The aggregate production of the Thomas Gilchrist steel is said to have been, in 1885, 945,317 tons. In England, 145,707; in France, 130,582; in Germany and Austria, 617,514; in Belgium and other countries, 51,514. Of the aggregate, 600,183 tons contained under .18 per cent carbon, this quality being used for wires, sleepers, tin-plates, tubes, and boiler and ship plates. This is the same product that is yielded by the Reese patent, which has been so long before the Patent Office at Washington.

The principle of continuous motion used in band-saws for wood has been applied to stone-cutting. Instead of a flat metal band, three steel wires, twisted together and run at a very high speed, form the cutting surface. Water and sand are applied in the usual manner, as with the ordinary flat saws for stone. It is said that such saws advance in marble at from ten to twenty-four inches an hour, according to the hardness of the stone. It is also used for quarrying purposes, in dividing up masses of stone projecting between recesses in the quarry.

The annual meeting of the American Society of Civil Engineers was held at the Society's house, New York City, Jan. 20 and 21, 1886.

Technics.

The distinction between matter and mind is, that the denser a person's mind, the easier it generally is to see through him.

The standard "chesnut" about the geological student who couldn't make out the era of formation of the Back Bay land, is going the rounds again.

French Professor: "For what are the French famed, Mr. B.?"

Mr. B.: "For their revolutions, immoral character,——"

French Professor (hurriedly): "Next!"

We get the following conundrum direct from a young ladies' boarding-school, and have secured the copyright: What is the difference between an apple and a pretty girl? One you squeeze to get cider; the other you *get side o'* to squeeze!

First Student (coming from examination, and turning up his coat-collar to second ditto, dismally): "Well, Jim, pretty cold day for us, isn't it?"

Second S. (transferring his "pony" from sleeve to pocket): "Ye—es; I feel a little hoarse, myself."

"All men are born free and equal," but the difficulty is that some are born equal to half a dozen others.—*Life*.

The Athletic Club will hold a "gentlemen's indoor meeting" in the gymnasium on Saturday, February 13th. The following events will be contested, for which entries are now open: Sparring; feather-weight (under 128 pounds), light-weight [under 140 pounds], middle-weight [under 160 pounds], and heavy-weight, [over 160 pounds]; Wrestling, feather, light, middle, and heavy-weights, same limits; and Fencing.

AT A PRIVATE THEATRICAL. (Between the acts.)

Maid: "Coffee, sir?"

He (of the audience): "No, thank you. It might keep me awake next act."—*Columbia Spectator*.



Two new furnaces have been added to the Assay Laboratory.

The Hammer and Tongs Club will dine at Young's, Saturday, February 13th.

Any men desiring to practice for the nine, in the gymnasium, will please hand in their names to Sturges, '87.

Our thanks are due to Mr. Lyman Farwell, formerly '87, for a handsome lithograph of the St. Paul, Minn., ice-castle.

Thomas, '87, and Clement, '89, the battery of last year's team, have been practicing in the gymnasium for the past month.

Tuques are being worn by many Tech students. The Civils in particular affect them, and look *tu-que-er* for anything.

The department of Mechanical Engineering contains one third of all the students of the three upper classes.

There is talk of organizing class polo teams of ice-skaters, and having a series of games for the championship.

E. R. Warren, '81, states in a recent letter that he has gone to Irwin, Col., "to become an honest miner."

A middle-aged lady standing in front of Roger's Building, and looking at it with great respect, recently inquired, "what church that was."

'89 should have the credit of having provided plenty of dance-orders at their semi-annual exhibition, as this has not always been the case at the crowded drill-parties.

An innovation is announced for February 20th in the form of an afternoon German, under the same management as the first afternoon party of the season.

A LOGICAL CONSEQUENCE.—(*At the drill party Freshman to chum, mournfully*): "What a *God-forsaken* lot of pretty girls there are here that I don't know."

The Juniors, after being taught the whole term only *how to study* Constitutional History, have been examined upon Constitutional History itself. This calls for investigation.

Many of the Institute students who have watched with interest the preparations for an ice-rink in the Union Grounds, will be sorry to learn that it is a private enterprise.

The new pin of the K_2S has appeared. It is in the form of an open book, showing on one page the letters K_2S , and on the other an owl perched on a platinum retort; the rest of the pin being solid gold.

Mr. Howard Walker criticised the four or five designs for a gate lodge, in the architectural department, and gave Mr. Hills the highest mark, Mr. Prescott's, Mr. Wakefield's and Mr. Brainerd's following.

Students at the Institute will do well to visit the Young Men's Christian Association gymnasium at quarter past five. Profs. Richards, Drown, and Holman, and Messrs. Burrison and Fitch take part in the dumb-bell drill.

It is reported that the third-year men were seen entering Prof Runkle's examination-room with such books as "The Lightning Calculator," "Algebra Made Easy," and "The Condensed Metric System," under their arms.

The Soph. who is taking Physical Laboratory says that it's bad enough to have to enter about a dozen "corrections" for every observation, without having the instructor come along and put down a lot more with a blue pencil.

Fifteen of the architects submitted designs for a pedestal. Mr. Billings (as has been his habit of late) took first mention; Mr. Gay, second; Mr. Hiscox, third; Mr. Shortall, fourth;

and Mr. Carpenter, fifth. Prof. Clark pronounced the designs among the best that had been handed in in that class of problems.

A certain Junior has an almost superstitious regard for his Shakespeare calendar. During the recent examinations, the quotation for one day was, "The weakest goes to the wall;" for another, "Let your own discretion be your tutor;" and for one of the days of rest, "Let us not burthen our remembrance with a heaviness that's gone."

About fifteen members from '87, desirous of expressing their appreciation of the hard and earnest work of Mr. Cooley, Captain of the Eleven, recently presented him with a handsome gold foot-ball, to be worn as a watch-charm. His name is engraved on one side, and M. I. T. 1885 is done in enamel on the other, the periods being diamonds. The strange part of this is, that the box in which it came was tied with a purple ribbon.

The class of '81 held their first reunion since graduation, at the Hotel Vendome, on Wednesday evening, Dec. 30, 1885. About twenty members were present, and the varied songs, stories, etc. contributed by the members, assisted by Mr. John C. Wild, of the Boston Banjo Quartette, served to make the evening one of great pleasure to all; and the universal sentiment was in favor of more frequent gatherings. The *ménus* were much admired for their originality. Mr. Frank W. Rollins officiated as Toastmaster.

A meeting of the Athletic Club was held Jan. 11th, President Wood in the chair. The sum of \$40 was voted to the Foot-Ball Association, to cover expenses incurred at the Springfield game. A thorough discussion was had as to the advisability of holding a gentlemen's meeting early this term. Mr. Theodore Stebins offered his resignation as Secretary of the club, as he hardly felt able, on account of other duties, to give the office the desired attention. The resignation was accepted, with a vote of thanks for his services, and Mr. G. C. Dempsey, '88, was elected to fill the position.

THE COLLEGE WORLD.

HARVARD. The expenses of the Harvard University Boat Club for last year were \$6,400, and the present debt amounts to \$1,700.—The average weight of the candidates for the Harvard crew is about 160 pounds, or three pounds heavier than that of last year.—Prof. J. K. Paine is composing an oratorio, which will be produced next spring.—Lawrence Barrett is expected to deliver a lecture to the Shakespeare Club of Harvard, some time in the near future.—About thirty men are trying for the Mott Haven team.

COLUMBIA. The gymnasium committee, of the senior class, has issued an appeal to the Alumni of the college for funds with which to build a new gymnasium. The estimated cost is \$100,000.—The library has received a gift of \$5,000 for the purchase of books.—Athletic interests at Columbia are in a very promising condition. Great interest is shown in base-ball, this year. Preparations are being made for putting a first-class nine into the field.

YALE. The university crew has just begun work in the gymnasium.—The tug-of-war men have gone into training for the Mott Haven games.—The crew is \$1,200 in debt. The *News* urges the college to pay it off.

ELSEWHERE. The late Isaac Farnsworth has left \$100,000 to Wellesley for an Art School.—The expenses of the Princetown nine during the past season were nearly \$3,000. (*Yale News*).—The charter of Brown University requires that the President be a Baptist minister; the charter of Yale requires a Congregational minister for that capacity.—The botanical collection of Columbia College approximates 75,000, being about one-half of the different forms of plants known to exist.—The Christmas recess at Dartmouth lasted four weeks.—The University of Chicago has become so indebted that it has been sold.—Prof. George Allen's famous chess library, containing over a thousand volumes, has been given to the library of the university of Pennsylvania.—The post-graduate courses at Cornell are free to graduates of that or any other university.



A CHESTNUT.

I met my love in the winter,
In weather confoundly cold:
"Faint heart ne'er won fair lady,"
So I wooed in manner bold;

And the breeze through the branches did mournfully blow,
As I sang to my love of the "Beautiful snow."

A good long year has passed since then,

But the weather for me is cold,—

For a pretty brown mitten was given to me,

If a sad tale had better be told;

And the wind through my whiskers doth drearily blow,
As I sing all alone of the beautiful's "No."—*Yale Record*.

Folly Young Man (to total stranger): "Come in and take something. Let's all be happy. 'Live and let live,' is my motto."

T. S. (frigidly): "It's not mine, sir."

J. Y. M.: "Not yours? You amaze me!"

T. S. (confidentially): "I'm an undertaker, my dear sir."—*Ex.*

Small Boy (pointing to a picture of the herald angels): "Is them angels, ma?"

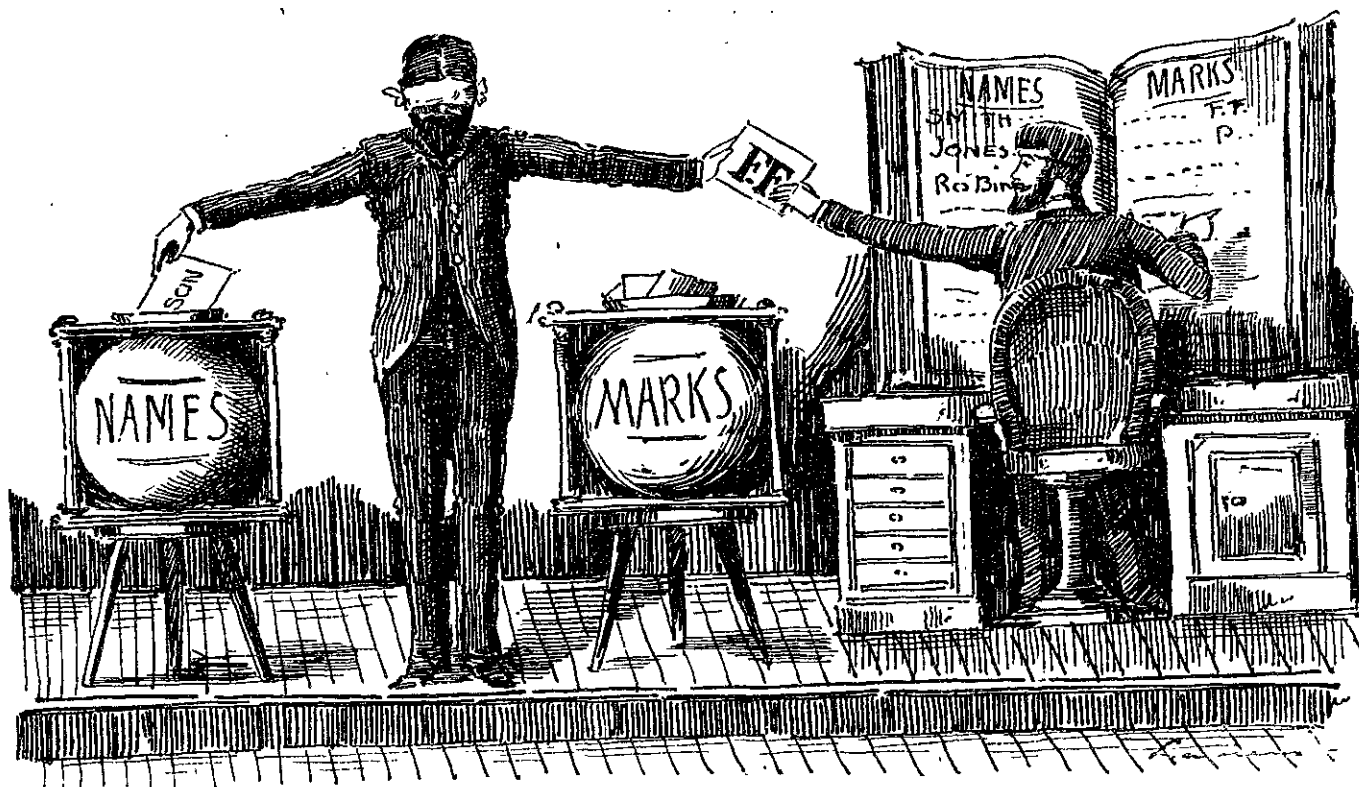
Mother: "Yes, my child."

Small Boy: "How do they get their night-shirts on over their wings?"—*Ex.*

"Papa, I read in the paper to-day that Mr. Brief is an upright lawyer," said Johnny Crimsonbeak to his father at supper the other evening. "Now tell me what is an upright lawyer."

"Well, Johnny," replied the head of the house, whose late experience with a disciple of the bar was still fresh in his mind, "I presume an upright lawyer is one who lies straight up and down."—*Ex.*

First Young Lady: "I acted with him in a little play—in 'The Register.'" *Second Y. L.:* "You must have had a tight squeeze."—*Yale Record*.



BLIFFINS' IDEA OF OUR MARKING SYSTEM.
P. S.—BLIFFINS GOT F.F. AT THE SEMI-ANNUALS.

If you will only practice long enough at setting a steel trap, you will be sure to get your hand in.—*Ex.*

POOR CONSOLATION. *Cook (to maid, weeping):* "Your parents will not let you marry your sweetheart, you say? Never mind. Such a pretty fellow as he can easily find another."—*Fliegende Blatter.*

REDUCED TO A SYSTEM. *Solicitous Friend:* "That's an awful cold you've got, my dear boy! Now, what you want is to go right home and take——"

Victim: "Just jot it down in this book, please. I've got one hundred and forty-six other recipes already, and I expect to meet enough friends before night to bring it up to two hundred."—*Puck.*

"I've got the drop on you," said the snow-shoveller, as he jauntily floored a passer-by with half a ton of the congealed vapor. "Come off the roof!" was the reply, wafted from among the ruins.—*Lampoon.*

"Do you allow drunken people on the train?" asked a clergyman at the City Hall elevated station in New York.

"Sometimes; but not when they are too drunk," replied the brakeman. "Just take a seat in the middle of the car and keep quiet, and you'll be all right."—*Ex.*

POSTPONED.

"Gentlemen," said a college President at a meeting of the Faculty, "we must take means at once to stop the game of foot-ball. It is bringing our grand old institution into disrepute."

Just then a great noise was heard outside, and the President demanded the cause of it.

"News has just been received," explained one of the younger professors, apologetically, "that our men have wrested the foot-ball championship from Princeton."

"Good!" shouted the President, flushing with excitement; "I didn't dare hope it. I think, gentlemen, we had better not be too—er—hasty in the matter."—*Life.*

WRAPS.

Blanket
Wraps.

English Shawls, Blanket and Flannel Wraps for Men, Women, and Children. For the Sick-Room or Bath, or those having occasion to be up nights will find them indispensable. \$3.75 to \$35, at Noyes Bros.'

FULL
EVENING
DRESS
SHIRTS.

Made in the most Thorough and Elegant manner for
WEDDINGS,

Dinner Parties, Reception, or any occasion.

Constantly on hand and to special measure at short notice, at Noyes Bros'.

NOYES BROS.
Washington & Summer Sts.,
BOSTON, U. S. A.

ENGLISH
DRESSING
JACKETS
and GOWNS

Smoking-Jackets, Long
Gowns, House and Office
Coats, Bath-Wraps, Rugs,
and Shawls.

PAJAMS
AND LONG
FLANNEL
NIGHT
SHIRTS.

For Steamer Wear, for
Sleeping-Cars and Home
Use. Indispensable for those
wishing a protection from colds.

Gentlemen will always find Full Evening
Dress Shirts in proper Fashion, in Stock,
ready for immediate use, at Noyes Bros.

ENGLISH UNDERWEAR and Hosiery.
Medium Fall and Heavy Winter Weights
in Pure Wool, Silk and Balbriggan.
Medium and Finest Grades at lowest
prices.

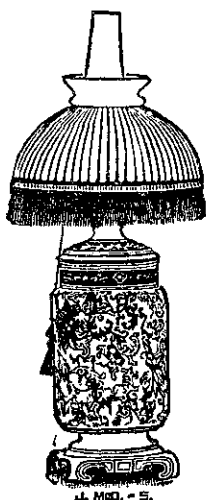
Lambs-wool Abdominal Bands, a positive
cure of all bowel troubles, ladies' and men's,
at Noyes Bros.'

Ladies' and Gentlemen's English waterproof
coats and ulsters, with hoods or capes, in stock
and to special measure, at Noyes Bros.'

Martin's, and Brigg's, the two best London
makers, and the best American Silk Umbrellas
and Canes, from \$3 to \$45, at Noyes Bros.'

Full Evening Dress Shirts, Collars, Cuffs,
and Cravats, always in the late English fash-
ion, at Noyes Bros.'

English Neckwear just opened at Noyes
Bros., Washington and Summer Sts., Boston,
Mass., U. S. A.



Fine Pottery, Glass, and Lamps.

THE subscribers invite attention to their stock of the above branches, which we dare say is not excelled on this continent. One of our firm visits the Potteries of England, France, Germany, China, and Japan, seeking the best products from original sources. We have also specimens from the best home manufacturers, comprising desirable exhibits of useful and ornamental wares, to which we invite inspection. Six floors, wholesale and retail.

JONES, McDUFFEE & STRATTON,
120 Franklin Street, corner Federal.

N. B.—From the old Wedgwood Pottery we have Plaques, Duplex Lamps, Plates, Mugs, Tiles, Jugs, Coffees, etc., decorated with Boston scenes (including cut of the Tech Institute), which may be found desirable as souvenirs.

Genuine Silk Sponge Towels.

Every Fibre of these SILK TOWELS Guaranteed to be PURE SILK without mixture.

BATHING.

For removing the secretions of the pores of the skin, leaving a healthy surface, Silk Towels are better than anything else known. They should be used as a sponge, with soap and water, or bay rum, and like washes. They are the Best Face Cloth known.

FOR GENERAL HOUSEHOLD AND HOTEL USE.

Wet with pure water (no soap required), in Wiping Table Glassware, Cleaning Paint, Cleaning and Polishing Windows, Cleaning Linoleum Carpets, Cleaning Metal Signs, Cleaning Furniture, Mirrors, and Washing Dishes.

THEY ARE A SUCCESS. THEY ARE VERY DURABLE.

Soft as a new Chamois, never getting hard, to scratch the most highly polished Furniture. Unlike a sponge, which is never clean but once, namely, before it is used, a Silk Sponge Towel can be easily washed, and is then as clean as new. They are an absolute necessity to those who take a pride in their housekeeping.

EVERY TOWEL WARRANTED WHEREVER PURCHASED.

For sale, wholesale and retail, by all the leading Druggists, first-class Dry-Goods Dealers, Ladies' or Gents' Furnishing Stores, and all dealers in Fine Groceries.

Retail Price, 25 Cents each, limited.

GEO. S. BROWN, Inventor.



RICHMOND STRAIGHT CUT

No. 1

CIGARETTES.

PERSONS who are willing to pay a little
more than the price charged for the ordi-
nary trade Cigarettes will find these Cigar-
ettes far superior to all others.

Beware of Imitations,

And observe that signature of undersigned
appears on every package.

ALLEN & GINTER,

MANUFACTURERS,

Richmond, Va.

COLLINS & FAIRBANKS,

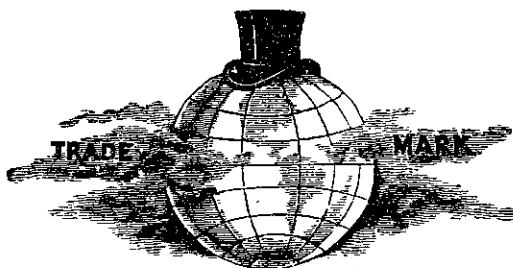
STYLES SPECIALLY ADAPTED TO YOUNG MEN.

Opera Crush Hats,

English Hats,

Silk Hats,

Felt and Cloth Hats,



Leather Hat Boxes,

Umbrellas,

Fur Caps,

Walking Sticks.

AGENTS FOR WHITE'S and LINCOLN BENNETT & CO.'S LONDON HATS.

407 Washington Street,

Opposite
Macular, Parker & Co.,

Boston, Mass.

T. E. MOSELEY & CO.,

469 Washington Street,

BOOTS AND SHOES

Invite attention of the young gentlemen of "The Tech" to a
Large Assortment in

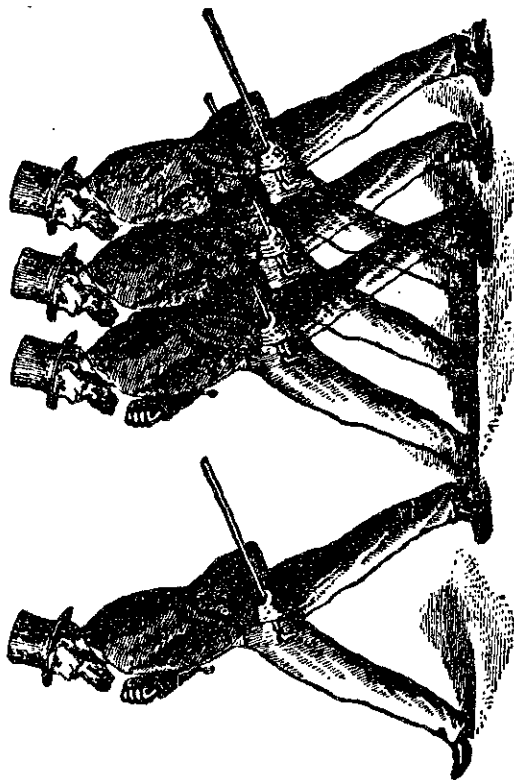
LACE, CONGRESS, and BUTTON,

FROM \$4.50 UPWARD.

Some SPECIALLY FINE ONES at \$5.00 and \$5.50.

Also, a Large Line of

HAND-SEWED GOODS at the LOW PRICE of \$6.50.



Original Importers of

Waukenphast's English Boots, Shoes, Etc.

TENNIS and GYMNASIUM SHOES

In Great Variety.

Special inducements to members of "The Tech."

T. E. MOSELEY & CO.,

No. 469 Washington Street, Boston.

TOOL DEPOT.

CALL AND EXAMINE THE LARGEST ASSORTMENT
— OF —

MACHINISTS' TOOLS

AND SUPPLIES

To be found in New England.

A. J. WILKINSON & CO.

184 and 188 Washington Street, Boston, Mass.

JAMES NOTMAN,

Photographer

— TO —

CLASS OF '85, INSTITUTE OF TECHNOLOGY,

— AND —

HARVARD '80, '81, and '85.

Boston Studio, 99 Boylston Street,

Opposite Public Garden.

Harvard Studio, 400 Harvard St., Cambridge.

BOSTON FOREIGN BOOK STORE.

CARL SCHOENHOF,

144 Tremont Street, Boston.

Boston School of Languages

44 Boylston Street (Pelham Studio).

CORPS OF TEACHERS.

JULES A. HOBIGAND, A.M.
CARLO VENEZIANI, Ph.D. (Hei-
delberg).

C. B. FRYE, A.M.
PAUL CARUS, Ph.D. (Tubingen).
G. GOMEZ.

Special advantages offered at this school for learning to speak, write, and understand FRENCH, GERMAN, SPANISH AND ITALIAN. Classes will be formed for any hour, day or evening. Terms, 40 lessons for \$10.00.

Students conditioned in pure or applied mathematics and languages can obtain private instruction. 20 private lessons for \$20.00.

Application can also be made at the COLUMBUS SCHOOL OF LANGUAGES AND SCIENCES, 179 Tremont Street. (Take elevator.)

References by permission to well-known members of the Faculty.

W. B. CLARKE & CARRUTH,

Booksellers,

IMPORTERS AND STATIONERS,

340 Washington Street, Boston.

Engraving Wedding Invitations, Visiting Cards
and CLASS-DAY INVITATIONS a specialty.

WALTER C. BROOKS & CO.

TAILORS

6 UNION STREET, - - - - BOSTON.

Stock selected Particularly for Young Men's Wear.

JACOB GERLACH,

(Successor to F. Herchenroder)

Ladies' and Gents' Hair Cutting.

**54 TEMPLE PLACE,
BOSTON.**

Manufacturer of Ventilating or
Gossamer *wigs* and *toupees*.
Ladies' Hair Work of every va-
riety. Children's Hair cut in the
neatest style.

BASE-BALL, Cricket, the Turf,
Aquatic and Athletic per-
formances, Billiards, Chess, etc.—
In fact, all the latest and most re-
liable reports of events in the Out-
door and Indoor Sporting World,
and Theatrical and General Show
News, can be found in the

New York Clipper

Price, Ten Cents.

Published every Wednesday.

For sale by all Newsdealers.

The Frank Queen Publishing Co.

(LIMITED.)

THE "MIKADO" continues at the Hollis St.
Theatre, and with increased favor, in view of
the changes in the cast. It has reached the
hundredth performance.

A NEW play is being presented at the Bijou
Theatre this week. Miss Myra Goodwin will
present "Sis," which has been especially writ-
ten for her.

THE "RATCATCHER," under the superintend-
ence of the Kiralfy Brothers, will be played
another week at the Boston Theatre. The cos-
tumes and stage-settings are brilliant, and many
novelties are introduced.

Mr. J. F. HARRIS

announces that he has opened the

HOWLAND CAFÉ.

He would especially solicit the patronage of Technology Stu-
dents. A private room can be placed at the disposal of a club of
ten. Meal and Lunch tickets are sold.

216 COLUMBUS AVENUE.

D. TOY,

* TAILOR *

—11—

Charles Street,

BOSTON.

NEAR BEACON STREET.

THE ASSOCIATION GYMNASIUM,

R. J. ROBERTS, Superintendent.

Corner Boylston and Berkeley Sts.

The Newest and Most Complete Gymnasium in regard to
Apparatus and all other Appointments.

Terms, including Box, Measurements, Personal and Glass Instruction,
\$8.00 per year; for three months, \$5.00.

Young men purposing to join a Gymnasium are invited to
inspect this Gymnasium thoroughly.

YOUNG'S HOTEL,

(EUROPEAN PLAN)

Opp. head of State St., Boston.

Ladies' entrance, Court Street, near Washington Street.

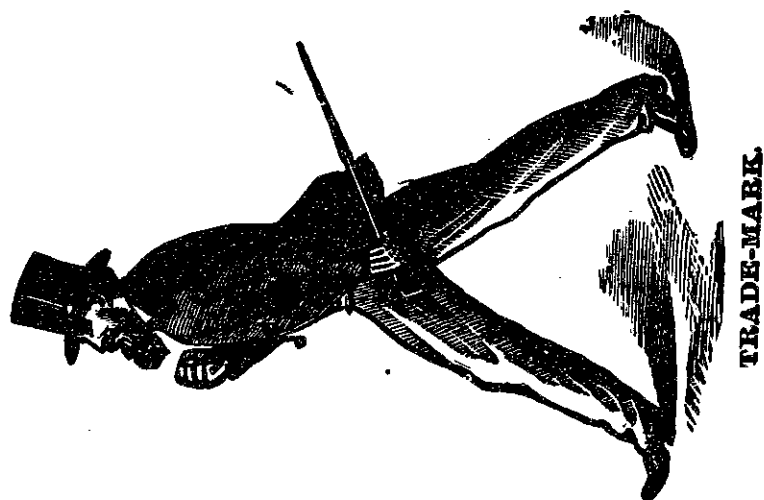
HALL & WHIPPLE, Proprietors.

ADAMS HOUSE,

(EUROPEAN PLAN)

Washington Street, - - Boston.

HALL & WHIPPLE, Proprietors.



15 per cent Cash Discount, to all Students, from our Regular Prices.

We keep one of the Largest Stocks of

First-class Boots and Shoes IN THE CITY.

Our prices are as low as any other house, and with the additional 15 per cent discount, less, than any house for the same quality goods.

FRENCH, ENGLISH, and AMERICAN GOODS

In all their varieties.

WE SELL A GOOD SHOE FOR \$5.00, ONE THAT CAN BE WARRANTED

SMALL BROTHERS,

371 Washington Street, - - - - Corner Bromfield Street.

THE
BRUNSWICK

BOSTON'S

Grandest Hotel

BARNES & DUNKLEE

Proprietors.



NEAR the Public Garden, Common, and Public Library, Museum of Fine Arts, New Old South, Trinity (Phillips Brooks's) Church, and opposite Institute of Technology.

Beacon, Dartmouth Street, and Huntington Avenue, and all Back Bay Cars, pass the Hotel for either up or down town, every three minutes.

WOODBURY'S CAFÉ,
—FOR—
LADIES AND GENTLEMEN,
196 Tremont Street,
Second door
South of Boylston Street, Boston, Mass.

Open Sundays from 8 A. M. to 8 P. M.

HAMMON WOODBURY, Proprietor.

C. A. W. CROSBY,
DEALER IN
DIAMONDS AND WATCHES,
474 Washington Street,
COR. AVON STREET. BOSTON.

STYLISH NECKWEAR,
COLLARS AND CUFFS FOR YOUNG MEN.

F. W. SEAVEY, - - - - 53 WEST STREET.

C. H. CODMAN & CO.

Manufacturers and Wholesale Dealers in every variety of

Photographers' Materials, Dry-Plate Amateur Outfits.

Sole Agents for the New Ortho-
panatic Lens.

34 Bromfield St., Boston, Mass.

The Original Barrett's Dye-House.

(ESTABLISHED 1804.)

Gentlemen's Garments DYED or CLEANSED, and PRESSED equal to New.

52 TEMPLE PLACE, BOSTON.

PREPARATION for the INSTITUTE of TECHNOLOGY.

PRIVATE SCHOOL,

18 Boylston Place, Boston.

ALBERT HALE.

Albums.

Fashionable Engraving.

STUDENTS' SUPPLIES

Stationery.

Scrapbooks.

ORDERS FILLED WITH PROMPTNESS.

O. E. RIDLER, Berkeley Street, cor. Boylston, BOSTON.

PRIVATE SCHOOL FOR BOYS,

23 Temple Place, Boston.

Preparation for College, INSTITUTE OF TECHNOLOGY, and
Business. Thorough Instruction given in Elementary
English Studies.

Native French and German Teachers.

LEROY Z. COLLINS.



J. & R. LAMB,

52 Carmine Street, - - New York.

SILK BANNERS, HAND-BOOK No. 5
BY MAIL.

Artistic Stained Glass

New designs, etc. Hand-book No. 2 by mail.

502 TREMONT STREET is strictly a "SCHOOL" for
Dancing, where "ALL" dances known to society are
taught.

New Classes November 2 and 5.

Private Lessons given at any hours.

E. WOODWORTH MASTERS, Instructor.

(Member of National Association.)

Note Books and Students' Supplies,

At lowest possible prices.

FRED W. BARRY,

108 and 110 Washington Street, Boston.

Corner of Elm Street.

Frank Wood,

Printer,

352 Washington Street, Boston.

Hastings

INSTANTANEOUS PORTRAITS,

147 Tremont Street, cor. West Street.

ELEVATOR TO ATELIER.

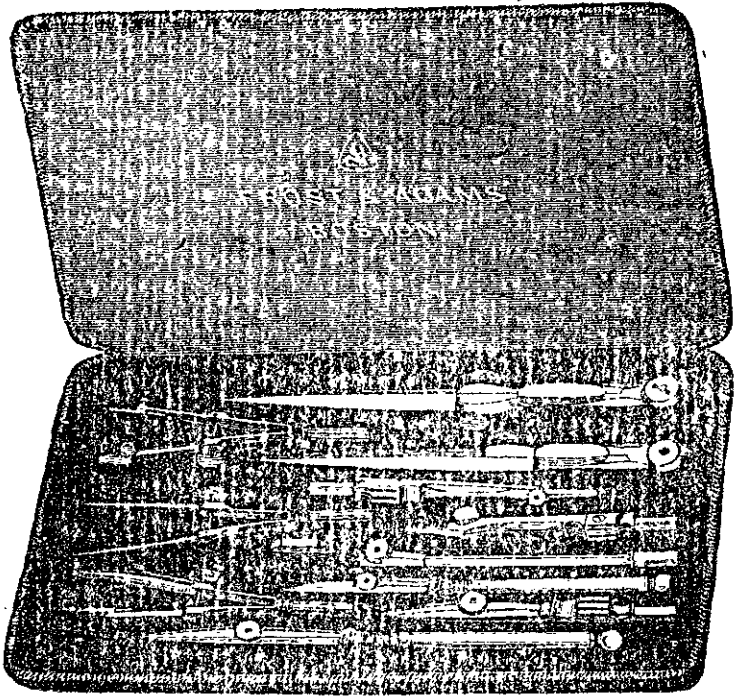
Photographer to Class of '86.

Cabinet Photos only \$5.00 per doz.

JOSEPH GILLOTT'S
STEEL PENS.

For Fine Writing, No. 1, 303, 170. For Broad Writing, 294, 389,
849. For General Writing, 332, 404, 390 & Falcon—873, 908.
Other Styles to suit all hands.

Sold by all Dealers throughout the World.



FROST & ADAMS,

IMPORTERS OF

Drawing Instruments

AND

Supplies for Students, Architects, and Engineers.

Designers' Colors a Specialty.

SEND FOR ILLUSTRATED CATALOGUE.

No. 37 Cornhill, - - - BOSTON.

J. C. LITTLEFIELD,

Chambers,

❖ FINE TAILORING ❖

2A Beacon St.

The Latest Novelties of the Season.

DRESS SUITS A SPECIALTY.

THE PATRONAGE
OF
THE STUDENTS OF
"TECH"
IS CORDIALLY
INVITED.

Harrington's
Handsome
Hats.
14 School Street.

BEST ASSORTMENT
OF
WALKING-STICKS
IN TOWN,
IN GOLD, SILVER,
AND
HORN MOUNTS.

JOHN R. FARRELL,

❖ TAILOR ❖

No. 14 Boylston Hall, Boston, Mass.

Finest line of Foreign and Domestic Fabrics constantly on hand, to be made in the best styles, at reasonable prices.

MILITARY SCHOOL JACKETS and UNIFORMS